IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF TEXAS
HOUSTON DIVISION

MAGĒMĀ TECHNOLOGY LLC,	§	
	§	
Plaintiff,	§	
	§	**Case No. 4:20-cv-02444**
v.	§	
	§	
PHILLIPS 66, PHILLIPS 66 COMPANY, AND WRB REFINING LP,	§	**JURY TRIAL DEMAND**
	§	
	§	
Defendants.	§	

DEFENDANTS' ORIGINAL ANSWER AND COUNTERCLAIMS

Defendants Phillips 66, Phillips 66 Company, and WRB Refining LP (collectively, "Defendants") answer each of the allegations reproduced below from the Complaint of Magēmā Technology LLC ("Magēmā") and assert the following counterclaims as follows:

INTRODUCTION

1. Magēmā's asserted patents are the culmination of work that began with a scientist and an engineer. Michael Moore is a chemist and businessman, who has extensive experience in the refining industry as well as aboard ocean-going vessels while serving in the United States Navy, and Bertrand Klussmann is a chemical engineer who spent a large portion of his career designing refining process solutions and developing innovative solutions to challenging problems facing the refining industry, for which he was awarded prior patents.

RESPONSE: Defendants lack sufficient knowledge or information to form a belief about the truth of the allegations.

2. Recognizing the significance of impending global regulations mandating lower sulfur content in marine fuel oil and the inadequacy of then-existing refining products and process technology to produce compliant marine fuel oil, Mr. Moore and Mr. Klussmann worked together, drawing from their collective decades of experience, to invent novel low sulfur fuel oil ("LSFO") products and processes for producing LSFO that are claimed in Magēmā's asserted patents.

RESPONSE: Defendants lack sufficient knowledge or information to form a belief about the truth of the allegations.

3. Mr. Moore and Mr. Klussmann, as well as others who later joined them, invested significant time and resources, including their own personal savings, in developing and commercializing the patented technology through their company, Rigby Refining LLC ("Rigby Refining")[1]. As part of their commercialization efforts, Mr. Moore, Mr. Klussmann, and others from Rigby Refining, were introduced to Defendants Phillips 66 and Phillips 66 Company (collectively "Phillips"). Key employees from Phillips professed a need for LSFO technology and expressed a serious interest in the Magēmā technology. For almost an entire year, Rigby Refining repeatedly met, emailed, and discussed, in confidence, the then patent-pending technology with Phillips.

[1] Rigby Refining is contractually committed to the commercialization of the asserted Magēmā patents and the technology that embodies the asserted Magēmā patents. Magēmā, however, owns all rights associated with the asserted Magēmā patents, including the right to sue for current and past infringement.

RESPONSE: Defendants admit that "Mr. Moore, Mr. Klussmann, and others from Rigby Refining, were introduced to Defendants Phillips 66 and Phillips 66 Company." Defendants lack sufficient knowledge or information to form a belief about the truth of the following: "Mr. Moore and Mr. Klussmann, as well as others who later joined them, invested significant time and resources, including their own personal savings, in developing and commercializing the patented technology through their company, Rigby Refining LLC" and that "Rigby Refining is contractually committed to the commercialization of the asserted Magēmā patents and the technology that embodies the asserted Magēmā patents. Magēmā, however, owns all rights associated with the asserted Magēmā patents, including the right to sue for current and past infringement." Defendants deny the remaining allegations set forth in this paragraph.

4. After requesting and receiving technical information as well as a technology tutorial presentation in February 2018, Phillips began to covertly implement the patented inventions in at least two of their refineries, with full knowledge that the inventors had filed for the asserted patents covering this technology, which the U.S. Patent and Trademark Office ("PTO") ultimately granted. Despite the inventors' best efforts to notify Phillips of their intellectual property rights, including giving Philips written notice of the first patent's issuance, Phillips continued its infringing activities, never bothering to respond to or acknowledge communications from the inventors once it had their technology in hand. In late 2019, Phillips began offering for sale and selling infringing LSFO products.

RESPONSE: Deny.

5. Phillips' history of strategic and opportunistic use of others' intellectual property until sued[2] reeks of an internal policy embracing so-called "efficient infringement," wherein corporations deliberately choose to infringe a patent rather than pay for a patent license, believing that the costs and hurdles stacked against a patent owner will deter it from enforcing its patent rights and believing that they are better off paying damages for past infringement in the form of a court-ordered reasonable royalty than engaging in licensing negotiations prior to infringement for a market-based reasonable royalty. While such behavior may be viewed as efficient for Phillips, there is nothing efficient about the wider impact of "efficient infringement" on the patent system. "Efficient infringement" frustrates the fundamental constitutional promise of rewarding inventors for their inventive efforts.

RESPONSE: Deny.

6. Magēmā brings this action to protect its intellectual property and to hold Phillips accountable for its unauthorized and willful infringement. Phillips' improper copying and unauthorized use of Magēmā's patented inventions not only fails to compensate the inventors for Phillips' extensive use of Magēmā's intellectual property, but also it substantially impedes Magēmā's efforts to commercialize the patented technology with other companies.

RESPONSE: Defendants deny that they copied and used "Magēmā's patented inventions" and the inventors are entitled to any compensation. Defendants lack sufficient knowledge or information to form a belief about the truth of the remaining allegations in this paragraph. .

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[2] *See, e.g., Separation Engineers, Inc., v. ConocoPhillips Company, et al.,* 12-cv-1713 (S.D. Tex. 2012) Complaint (ECF 1) and Opinion (ECF 60) (pertaining to Phillips' predecessor company, ConocoPhillips, and finding "a refiner told an inventor to hire a lawyer because it was using the inventor's technology without permission."); *Maxma v. ConocoPhillips, Inc.,* 2:03-cv- 421 (E.D. Tex. 2003) Complaint (ECF 1) (pertaining to Phillips' predecessor company, ConocoPhillips, and alleging "[u]nder the guise of a product evaluation period that was stretched out over years, ConocoPhillips misappropriated Maxma's EMP technology and trade secrets, surreptitiously incorporating the confidential disclosures into ConocoPhillip's own technologies.").

7. Finally, Phillips' egregious refusal to acknowledge or respond to the inventors, demonstrates a blatant disregard for Magēmā's patent rights, and coupled with its willful and unauthorized infringement, forced Magēmā to bring this action, thereby making this case exceptional and entitling Magēmā to an award of attorneys' fees and costs incurred in prosecuting this case.

RESPONSE: Deny.

THE PARTIES

8. Plaintiff Magēmā is a Delaware limited liability company, having a principal place of business at 710 N. Post Oak Road, Suite 351, Houston, Texas 77024.

RESPONSE: Defendants lack sufficient knowledge or information to form a belief about the truth of the allegations.

9. On information and belief, Defendant Phillips 66 is a Delaware corporation, having a principal place of business at 2331 CityWest Blvd., Houston, Texas 77042.

RESPONSE: Admit.

10. On information and belief, Defendant Phillips 66 Company is a Delaware company, having a principal place of business at 2331 CityWest Blvd., Houston, Texas 77042 and is a wholly-owned subsidiary of Phillips 66.[3]

[3] Phillips 66 2019 Annual Report, filed February 21, 2020 *available at* https://s22.q4cdn.com/128149789/files/doc_financials/annual_report/2019/PSX-web-ready.pdf

RESPONSE: Admit.

11. On information and belief, Defendant WRB is a Delaware limited partnership, having a principal place of business at 411 S. Keeler Ave., Bartlesville, Oklahoma 74003 and maintaining a regular and established place of business at 2331 CityWest Blvd., Houston, Texas 77042. On information and belief, Phillips 66 is the operator and managing partner of WRB.[4]

RESPONSE: Admit.

NATURE OF THE ACTION

12. This is a civil action for infringement of Magēmā's U.S. Patent No. 10,308,884 ("the '884 Patent"), a true and correct copy of which is attached as Exhibit 1; U.S. Patent No. 10,533,141 ("the '141 Patent"), a true and correct copy of which is attached as Exhibit 2; U.S. Patent No. 10,604,709 ("the '709 Patent"), a true and correct copy of which is attached as Exhibit 3; and U.S. Patent No. 10,584,287 ("the '287 Patent"), a true and correct copy of which is attached as Exhibit 4 (collectively, "the Magēmā Patents"). This action arises under the Patent Act of the United States, 35 U.S.C. § 101 *et seq.*

RESPONSE: Admit.

13. Each of the Magēmā Patents was fully examined by the United States Patent and Trademark Office ("PTO") and issued after such examination. The Magēmā Patents are valid and enforceable.

[4] Phillips 66 2019 Annual Report, filed February 21, 2020 *available at* https://s22.q4cdn.com/128149789/files/doc_financials/annual_report/2019/PSX-web-ready.pdf

RESPONSE: Defendants admit that the patents issued after examination. Defendants deny the remaining allegations set forth in this paragraph.

14. The ’884 Patent was duly and legally issued on June 4, 2019.

RESPONSE: Defendants admit that the patent issued on that date, but deny that the patent was duly, legally, or otherwise properly issued.

15. The ‘141 Patent was duly and legally issued on January 14, 2020.

RESPONSE: Defendants admit that the patent issued on that date, but deny that the patent was duly, legally, or otherwise properly issued.

16. The ’709 Patent was duly and legally issued on March 31, 2020.

RESPONSE: Defendants admit that the patent issued on that date, but deny that the patent was duly, legally, or otherwise properly issued.

17. The ’287 Patent was duly and legally issued on March 10, 2020.

RESPONSE: Defendants admit that the patent issued on that date, but deny that the patent was duly, legally, or otherwise properly issued.

18. Each of the named inventors assigned the Magēmā Patents to Magēmā, as reflected in the records of the PTO. Magēmā owns the right, title and interest in each of the Magēmā Patents, including the right to sue for past and present infringement.

RESPONSE: Defendants lack sufficient knowledge or information to form a belief about the truth of the allegations.

JURISDICTION AND VENUE

19. This Court has original jurisdiction over the subject matter of this patent litigation action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

RESPONSE: Admit.

20. This Court has personal jurisdiction over Defendant Phillips 66 because Phillips 66 maintains a principal place of business in Houston, Texas, and from that location regularly conducts and/or directs the acts accused of infringement herein. On information and belief, Phillips 66 operates its refineries that practice the infringing processes from its Houston, Texas offices. On information and belief, Phillips 66 also makes, uses, supplies, trades, advertises, offers to sell, and/or sells the infringing LSFO products, within the State of Texas and this District, as set forth in the Paragraphs below. Phillips 66 has purposefully and voluntarily placed one or more of its infringing LSFO products into the stream of commerce with the intention and expectation that they will be purchased and used by customers in this District by trading, offering to sell, and/or selling the infringing LSFO products through its Houston, Texas offices.

RESPONSE: Defendants admit that this Court has personal jurisdiction over Phillips 66 and that it conducts or directs the acts accused of infringement from its principal place of business in Houston, Texas. Defendants deny the remaining allegations set forth in this paragraph.

21. This Court also has personal jurisdiction over Defendant Phillips 66 Company because Phillips 66 Company maintains a principal place of business in Houston, Texas, and from that location regularly conducts and/or directs the acts accused of infringement. On information and belief, Phillips 66 Company operates its refineries that practice the infringing processes from its Houston, Texas offices. Further, on information and belief, Phillips 66 Company makes, uses, supplies, trades, advertises, offers to sell, and/or sells the infringing LSFO products, within the State of Texas and this District, as set forth in the Paragraphs below. Phillips 66 Company is listed as the manufacturer and supplier of the infringing LSFO product and provides a Houston, Texas address on publicly available safety data sheets for said product. Phillips 66 Company has purposefully and voluntarily placed one or more of its infringing LSFO products into the stream of commerce with the intention and expectation that they will be purchased and used by customers in this District by trading, offering to sell, and/or selling the infringing LSFO products through its Houston, Texas offices.

RESPONSE: Defendants admit that this Court has personal jurisdiction over Phillips 66 Company and that it conducts or directs the acts accused of infringement from its principal place of business in Houston, Texas. Defendants deny the remaining allegations set forth in this paragraph.

22. This Court has personal jurisdiction over Defendant WRB because WRB maintains a regular and established place of business and regularly conducts business in Houston, Texas, availing itself of the rights and benefits of the laws of Texas and this District. On information and belief, WRB's Wood River Refinery, which practices the infringing processes, is operated from Houston, Texas. On information and belief, WRB, either directly or through its operator and

managing partner (Phillips 66), makes, uses, supplies, trades, advertises, offers to sell, and/or sells the infringing LSFO products, within the State of Texas and this District, as set forth in the Paragraphs below. WRB has purposefully and voluntarily placed one or more of its infringing LSFO products into the stream of commerce with the intention and expectation that they will be purchased and used by customers in this District by trading, offering to sell, and/or selling the infringing LSFO products in Houston, Texas.

RESPONSE: Defendants admit that this Court has personal jurisdiction over WRB. Defendants deny the remaining allegations set forth in this paragraph.

23. Venue is proper in this judicial district under 28 U.S.C. § 1400(b) because Defendants maintain regular and established places of business in this District, regularly conduct business within this District, and, on information and belief, have committed acts of infringement in this District. On information and belief, Phillips 66, Phillips 66 Company, and WRB share an over 1 million square foot facility in Houston, Texas and employ over 2,000 people in Houston, Texas.

RESPONSE: Defendants admit that venue is proper. Defendants deny that they have committed acts of infringement.

BACKGROUND

Regulation of the Sulfur Content in Marine Fuel Oils

24. Heavy marine fuel oil, the fuel used to power massive engines of ocean-going vessels vital to international trade, plays a crucial role in the global economy. The combustion of

heavy marine fuel oil in these engines, however, contributes to global pollution, emitting undesirable exhaust gases into the air.

RESPONSE: Admit.

25. Historically, ocean-going vessels have primarily consumed inexpensive, high sulfur heavy marine fuel oil, which is also sometimes referred to as residual fuel oil or bunker fuel oil. The combustion of sulfur-containing heavy marine fuel oil produces sulfur oxides (SO_x), which are released into the air as part of the exhaust gas. Sulfur oxides, including sulfur dioxide (SO_2), are known pollutants, both harmful to human health and the environment. For example, sulfur oxides contribute to haze and acid rain.

RESPONSE: Admit.

26. In 1997, the International Maritime Organization ("IMO"), an agency of the United Nations responsible for issuing certain standards for the international maritime industry including environmental standards, adopted what is known as the Convention for Prevention of Marine Pollution ("MARPOL") Annex VI. *See* MARPOL 73/78, Annex VI at Regulation 14. Annex VI curtails sulfur oxide emissions from ocean-going vessels through a reduction of the sulfur content of heavy marine fuel oil. Annex VI initially went into effect in 2005, capping sulfur content of heavy marine fuel oil at 4.50% by weight. *See, e.g.,* MARPOL 73/78, Annex VI at Regulation 14. Since then, the limits on sulfur content in heavy marine fuel oil have been progressively tightened.

RESPONSE: Admit.

27. In 2008, IMO adopted revised Annex VI to further limit the sulfur content of heavy marine fuel oil. *See* Marine Environment Protection Committee ("MEPC") Resolutions 176(58), 320(74)[5]; 40 C.F.R. §§ 1043.1, 1043.5, 1043.100. Specifically, revised Annex VI mandated a global reduction of the sulfur content of heavy marine fuel oil for ocean-going vessels from a maximum of 4.50% by weight to a maximum of 3.50% by weight, effective January 2012, and an additional, more drastic reduction from 3.50% by weight to 0.50% by weight in January 2020 ("the IMO 2020 Sulfur Cap"). MEPC 176(58) at Regulation 14; 40 C.F.R. § 1043.60. The IMO 2020 Sulfur Cap imposed a staggering 85% reduction of the sulfur content of previously available heavy marine fuel oil.

RESPONSE: Admit.

28. In addition to the general IMO 2020 Sulfur Cap, revised Annex VI imposed even stricter caps for emission control areas ("ECAs"), including the North American ECA, which is comprised of most of the U.S. and Canadian coast, MEPC 190(60), and the U.S. Caribbean Sea ECA, MEPC 202(62). For ECAs, revised Annex VI mandated a reduction of the sulfur content of heavy marine fuel oil for ocean-going vessels from a maximum of 1.50% by weight to a maximum of 1.00% by weight, by July 2010[6], and an additional reduction from 1.00% by weight to 0.10% by weight by January 2015 ("the IMO ECA Sulfur Cap"). MEPC 176(58) at Regulation 14; 40 C.F.R. § 1043.60.

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[5] MEPC is the IMO's technical body on marine pollution related matters and coordinates IMO's activities related to prevention and control of environmental pollution.

MEPC resolutions are available at http://www.imo.org/en/KnowledgeCentre/IndexofIMOResolutions/Marine-Environment-Protection-Committee-(MEPC)/Pages/default.aspx

[6] Because the U.S. Caribbean Sea ECA was not created until July 2011, the effective date for this cap as to this ECA was January 2014 instead of July 2010. MEPC 202(62)

RESPONSE: Admit.

29. Under revised Annex VI, the only alternative to switching to IMO-compliant fuel oil is the installation of an exhaust gas cleaning system known as "scrubber" to remove sulfur oxides from the exhaust gases prior to discharging the exhaust gases into the air. MEPC 259(68). Scrubbers have not been widely adopted in ocean-going vessels given costs, size, and logistics associated with the installation process.

RESPONSE: Admit.

30. Since 2010, the IMO 2020 Sulfur Cap posed a looming, serious threat to the international maritime industry, stemming from concerns that IMO 2020 compliant fuels would be prohibitively expensive and potentially unsuitable for ocean-going vessels as well as concerns that existing refineries and infrastructure would not be able to supply the global demand for IMO 2020 compliant fuels and IMO ECA compliant fuels. Not only did the IMO 2020 Sulfur Cap pose a serious disruption to the international maritime industry, but, as refiners realized that the demand for high sulfur fuel oil would plummet around the effective date of the IMO 2020 Sulfur Cap, refineries needed a new way to dispose of their high sulfur residual hydrocarbon streams that are produced as byproducts of other refining processes. In October 2016, IMO confirmed the January 2020 effective date of the IMO 2020 Sulfur Cap. MEPC 280(70).

RESPONSE: Defendants admit that the IMO 2020 Sulfur Cap required refineries to find alternative uses for their high sulfur residual hydrocarbon streams and that IMO confirmed the January 2020 effective date of the IMO 2020 Sulfur Cap in October of 2016. Defendants deny the remaining allegations set forth in this paragraph.

31. With significant economic incentive to find a solution to this problem, the refining industry proposed several fuels to comply with the IMO 2020 Sulfur Cap and the IMO ECA Sulfur Cap, including (1) blending higher sulfur heavy residual hydrocarbons with lower sulfur distillate or distillate-like hydrocarbons to reach a specific sulfur content ("Residual-Distillate Blends"), (2) using marine gas oil ("MGO") or marine diesel oil ("MDO") that are largely comprised of distillate materials, and (3) using liquefied natural gas ("LNG"). Because of well-known disadvantages with using MGO, MDO, and LNG, which are explained in the Magēmā Patents, *see, e.g.*, '884 Patent at 3:39-4:9, and a belief that sulfur molecules are essentially "trapped" in complex residual hydrocarbons, making the extent of sulfur removal required by the IMO sulfur caps economically impracticable if not technically unfeasible, the refining industry primarily focused on processes to create Residual-Distillate Blends in response to the IMO 2020 Sulfur Cap and the IMO ECA Sulfur Cap.

RESPONSE: Defendants admit that some in the refining industry have proposed "several fuels to comply with the IMO 2020 Sulfur Cap and the IMO ECA Sulfur Cap, including [but not limited to] (1) blending higher sulfur heavy residual hydrocarbons with lower sulfur distillate or distillate-like hydrocarbons to reach a specific sulfur content ('Residual-Distillate Blends'), (2) using marine gas oil ('MGO') or marine diesel oil ('MDO') that are largely comprised of distillate materials, and (3) using liquefied natural gas ('LNG')." Defendants deny the remaining allegations set forth in this paragraph, including that these were the only three contemplated solutions.

32. This approach, however, still presents many economic and technical drawbacks. For example, Residual-Distillate Blends are still more expensive because the lower sulfur distillate

hydrocarbons are more expensive. Distillate hydrocarbons also alter important fuel oil properties, including the viscosity and density, potentially rendering the Residual-Distillate Blends unsuitable for use in the engines of ocean-going vessels. As a result, Residual-Distillate Blends are less desirable to the maritime industry. In addition, mostly paraffinic distillate hydrocarbons have limited miscibility with highly aromatic heavy residual hydrocarbons. Such Residual-Distillate Blends may not be uniform mixtures and/or may separate during storage. Further, paraffinic distillate hydrocarbons tend to destabilize asphaltene molecules that are soluble in highly aromatic heavy residual hydrocarbons, thereby causing the complex asphaltene molecules to precipitate from the Residual-Distillate Blends. Asphaltene precipitates impair the operation of ship machinery during voyages, causing potentially dangerous mechanical failures. Finally, the delicate balance of paraffinic and aromatic hydrocarbons in Residual-Distillate Blends effectively prohibits refueling at different port locations with different Residual-Distillate Blends, essentially locking ships into specific suppliers. Not to mention that none of these solutions fully resolved the refiners' problem as to how to dispose of their unwanted, byproduct high sulfur residual hydrocarbon streams.

RESPONSE: Defendants admit there may be technical and economic challenges with any product, but deny any suggestion that these challenges prevent development of an industry compliant fuel.

33. As scheduled, the IMO 2020 Sulfur Cap recently took effect on January 1, 2020.

RESPONSE: Admit.

The Asserted Magēmā Patents

34. Mr. Moore and Mr. Klussmann, the named inventors on the first issued Magēmā Patent, recognized the above-described problems with the available marine fuel oil products and the state of refining process technology as well as the implications of the looming IMO 2020 Sulfur Cap.

RESPONSE: Defendants lack sufficient knowledge or information to form a belief about the truth of the allegations.

35. Mr. Moore and Mr. Klussmann also understood that sulfur content is only one property of heavy marine fuel oil. Other standards specify additional properties of marine fuel oil for use in an ocean-going vessel's engines. Such standards are designed to ensure that a fuel will properly perform in such engines without causing operational risks, such as mechanical failures and/or safety risks to the crew. One example is the International Organization for Standardization ("ISO") 8217:2017 that provides bulk properties acceptable for fuels for use in marine diesel engines, including ranges or limits for, *inter alia*, density, viscosity, flash points, flow properties and oxidation stability. *See* Exhibit 5 (ISO 8217:2017 Table).

RESPONSE: Defendants admit that some industry "standards specify additional properties of marine fuel oil for use in an ocean-going vessel's engines," that "such standards are designed to ensure that a fuel will properly perform in such engines without causing operational risks, such as mechanical failures and/or safety risks to the crew," and that "[o]ne example is the International Organization for Standardization ('ISO') 8217:2017 that provides bulk properties acceptable for fuels for use in marine diesel engines, including ranges or limits for, *inter alia*, density, viscosity, flash points, flow properties and oxidation stability" Defendants lack sufficient knowledge or information to form a belief about the truth of the remaining allegations in this paragraph.

36. Going against known and accepted refining industry practices, which focused on formulating Residual-Distillate Blends and coking high sulfur hydrocarbons to produce more distillates hydrocarbons, Mr. Moore and Mr. Klussmann's innovative solution proposed using a completed ISO 8217:2017 heavy marine fuel oil and hydroprocessing the heavy marine fuel oil to remove sulfur while preserving its key properties. Their resulting hydroprocessed heavy marine fuel oil product was compliant with the ISO 8217:2017 standard, the IMO 2020 Sulfur Cap, and the IMO ECA Sulfur Cap.

RESPONSE: Deny

37. Mr. Moore and Mr. Klussmann filed their first provisional application on February 12, 2017, almost three years before the IMO 2020 Sulfur Cap went into effect.

RESPONSE: Admit.

Rigby Refining Discloses the Patented Technology to Phillips

38. Phillips is well aware of the named inventors, the technology embodying the Magēmā Patents, and the Magēmā Patents themselves.

RESPONSE: Defendants admit that is aware of Mr. Moore and Mr. Klussmann and is aware of the Magēmā Patents at least through this lawsuit. Defendants deny the remaining allegations set forth in this paragraph.

39. In hopes of commercializing their invention, in March of 2017, Mr. Moore, the CEO of Rigby Refining, arranged a meeting with Phillips about Magēmā's "Solution to meet MARPOL Sulfur Limits." In advance of the meeting, Mr. Moore emailed Phillips a confidential presentation, which identifies "patents filed on both the process and operation parameters."

RESPONSE: Defendants admit that Rigby Refining made efforts to market its Magēmā concept to Phillips 66 in 2017, but Phillips 66 is still investigating the remaining allegations and presently lacks sufficient knowledge or information to form a belief about the truth of the allegations.

40. The Phillips' employee who set up the meeting explained in the calendar invitation that Mr. Moore "has developed a process to reduce sulfur in marine fuel," that "this work is currently under patent review," and further described the technology as his "proprietary technology."

RESPONSE: Defendants are still investigating these allegations and presently lack sufficient knowledge or information to form a belief about the truth of the allegations.

41. On April 3, 2017, Mr. Moore and Mr. Klussmann met with a number of Phillips' employees, including its Global Manager of Fuel Oils, Romulo Monsalve, Phil Swaim, Jason Gislason, and Simon Holt, at Phillips' offices in Houston, Texas to discuss the patent-pending technology and to present various collaboration and licensing options. Phillips' attendees expressed interest, and, on the following day, Phillips requested that Mr. Moore "contact Phil Swaim to get the sampling process moving forward for the PNW (Ferndale) and NYH (Bayway) barrels," which he did.

RESPONSE: Defendants are still investigating these allegations and presently lack sufficient knowledge or information to form a belief about the truth of the allegations.

42. On May 23, 2017, Mr. Moore met with Mr. Swaim and Mr. Monsalve over lunch, to discuss the samples and pilot testing. He also sent an NDA to Phillips in order to obtain samples for pilot testing. Despite having expressed interest—as well as skepticism regarding the technology—neither responded.

RESPONSE: Defendants are still investigating these allegations and presently lack sufficient knowledge or information to form a belief about the truth of the allegations.

43. After May 2017, communications from Phillips ceased for months, until February 13, 2018, when Dennis Vauk, Phillips 66's Director of Hydroprocessing Technology, reached out to Rigby Refining through email. Mr. Vauk requested a technical discussion of the "technology for desulfurizing fuel oil" and requested information about "how it might benefit [Phillips'] refineries in meeting the new 5000 ppm fuel oil spec," *i.e.,* the IMO 2020 0.50% Sulfur Cap.

RESPONSE: Defendants are still investigating these allegations and presently lack sufficient knowledge or information to form a belief about the truth of the allegations.

44. On February 14, 2018, Mr. Moore responded, sending additional technical information, including results from testing of high sulfur feedstock, and requesting more information about what Mr. Vauk wanted to discuss. In response to Mr. Moore's email, Mr. Vauk identified two Phillips' refineries, a "refinery on [sic] west coast that makes about 14,000 bpd of 2%+ sulfur fuel oil" and an "east coast refinery that makes about 20,000 bpd of ~1% sulfur residue." Mr. Vauk wanted to know "what [Magēmā's] process would likely do for these two examples."

RESPONSE: Defendants are still investigating these allegations and presently lack sufficient knowledge or information to form a belief about the truth of the allegations.

45. On February 16, 2018, Rigby Refining again met with Phillips in Phillips' Houston, Texas offices. This meeting included at least Mr. Vauk from Phillips and Mr. Klussmann from Rigby Refining. Mr. Klussmann presented a technology tutorial, including technical know-how, about the still patent-pending technology. During this meeting, Mr. Vauk indicated he understood and agreed with the technical aspects of the presentation, but expressed skepticism that Magēmā's technology was feasible in view of timing and costs. Following this meeting, Phillips unexpectedly ceased communications.

RESPONSE: Defendants admit that the requested meeting occurred, that Mr. Klussman presented, and that Mr. Vauk expressed skepticism that the idea presented was feasible. Defendants deny the remaining allegations set forth in this paragraph.

Phillips Surreptitiously Implements the Patented Technology

46. At a public February 2018 Credit Suisse Energy Conference, Greg C. Garland, Phillips 66's Chairman and Chief Executive Officer, told attendees that Phillips 66's IMO 2020 preparedness plan did not include making significant investments, focusing instead on Phillips' existing facilities to coke higher sulfur fuel oil and produce more distillate hydrocarbons. Exhibit 6 (Feb. 13 2018 Credit Suisse Transcript) at 9.

RESPONSE: Defendants deny that this paragraph fairly characterizes the statements of Mr. Garland on page 9 of Exhibit 6.

47. Yet mere weeks after the technical meeting with Rigby Refining, on March 26, 2018, Phillips submitted a construction permit application for an "International Maritime Operations Fuel Treatment Project" to the Illinois EPA for its Wood River Refinery, located in Roxana, Illinois. Exhibit 7 (March 2018 Permit). The Project Summary states that "[t]he project would enable the petroleum refinery to *remove sulfur* compounds from *fuel* to be used on marine vessels so that the fuel would meet new IMO fuel standards." Exhibit 8 (March 2018 Fuel Treatment Project Summary) at 2 (emphases added).

RESPONSE: Defendants deny any suggestion that its construction permit application was related to the March 2018 meeting with Rigby Refining, but otherwise admits the allegations.

48. Publicly, from May 2018 through June 2019, Phillips 66 described its "IMO 2020 Preparedness" in investor slide decks. In these slide decks, Phillips 66 continued emphasizing its existing "portfolio [is] well position[ed] for IMO 2020," and highlighted its "high distillate yield"

and "industry leading coking capacity," as opposed to the modifications of its refining facilities that implement Magēmā's technology, as reflected in its permit application. Exhibit 9 (Investor Update Slides June 2019) at 27 (emphases added).

RESPONSE: Defendants admit that Phillips 66 provided investor slide decks during the referenced time period, and that this paragraph quotes portions of page 27 Exhibit 9, which is one such slide deck. Defendants deny that this paragraph fairly characterizes the slide decks. Defendants deny the remaining allegations set forth in this paragraph.

49. At the same time, using what it had learned from the inventors, Phillips continued its adoption of Magēmā's patented-pending technology, submitting an additional construction permit application for a "High Sulfur Fuel Oil Tank Project" at its Wood River Refinery in April 2019. Exhibit 10 (April 2019 HSFO as Feed Permit). The project summary explained "[t]he project would *enable* the refinery to *receive* high sulfur *fuel oil* as a *feedstock for processing*' and "[t]his material has become an economical feedstock because of a new International Maritime Organization (IMO) standard for the sulfur content of fuel oil used by marine vessels." Exhibit 11 (April 2019 HSFO as Feed Project Summary) at 2 (emphases added).

RESPONSE: Defendants admit that they submitted the referenced application and that this paragraph quotes from it. Defendants deny the remaining allegations set forth in this paragraph.

50. On April 30, 2019, Phillips submitted a revision to its March 26, 2018 permit application. The summary explains "[t]he revisions to the permit would address additional changes at the refinery to enable it to maintain a portion of its capacity to produce very low-sulfur diesel

fuel." Exhibit 12 (April 30, 2019 Permit Application Revision) at 2. The permit further describes that "[o]ther existing emission units at the refinery would be affected by this project, including process heaters, cooling towers, the hydrogen plant and sulfur recovery units. This is because when ULD2 is *processing fuel oil* rather than ultra-low sulfur diesel, additional hydrogen is required, additional load is placed on the sulfur plant and additional diesel fuel treatment is required." *Id.* (emphases added).

RESPONSE: Admit.

51. Thereafter, in June 2019, Phillips publicly announced the "Wood River LSFO hydrotreater project" and the "Bayway LSFO hydrotreater project." *See* Exhibit 13 (Slides delivered at the 2019 Energy Conference on June 18, 2019) at 13. On information and belief, the modifications made in connection with the Wood River LSFO hydrotreater project—as reflected in the permit applications discussed above—were similarly made as part of the Bayway LSFO hydrotreater project.

RESPONSE: Defendants admit that the June 18, 2019 Energy Conference slides reference a "Wood River LSFO hydrotreater project" and a "Bayway LSFO hydrotreater project." Defendants deny the remaining allegations set forth in this paragraph.

52. Attempting to reopen discussions, on June 20, 2019, Mr. Moore informed Phillips through an email to Mr. Vauk, Mr. Romulo, and Mr. Swain of the issuance of the '884 Patent and attached the issued '884 Patent. Mr. Moore also notified Phillips 66 of Magēmā's other then-pending patent applications. Again, Phillips 66 did not respond.

RESPONSE: Defendants are still investigating these allegations and presently lack sufficient knowledge or information to form a belief about the truth of the allegations.

53. On a November 6, 2019 earnings call, Phillips' Vice President of Investor Relations, Jeff Dietert, declared "Phillips 66 is well positioned for the IMO environment with high diesel yield and more coking capacity than our peers. We'll also hear more about *compliant bunker fuels*." Exhibit 14 (November 6, 2019 Investor Day Transcript) at 10 (emphases added). Robert Herman, Phillips' Executive Vice President of Refining, later explained in the same presentation that Phillips was "making modest investments at Wood River and Bayway. Both projects are to take *high sulfur fuel oil* and *turn it into* a much higher margin *low sulfur fuel oil.* These projects also improve yields on those units." *Id.* at 20 (emphases added).

RESPONSE: Admit.

54. On December 3, 2019, less than one month before the January 1, 2020 effective date of the IMO 2020 Sulfur Cap, Phillips issued a safety data sheet for a new product, Very Low Sulfur Fuel Oil.[7] Exhibit 15 (SDS Very Low Sulfur Fuel Oil). The SDS shows Phillips' VLSFO is *not* a Residual-Distillate Blend.

RESPONSE: Defendants admit that the referenced safety data sheet issued on December 3, 2019. Defendants deny the remaining allegations set forth in this paragraph.

[7] As sulfur content limits have shifted over the years, so have the terms referring to the sulfur content of fuel oil. The Magēmā Patents use the term "low sulfur heavy marine fuel oil"—or LSFO—to refer to marine fuel oil that has a sulfur content of less than 0.5 wt%. The industry, however, currently uses the following terms: very low sulfur fuel oil ("VLSFO") refers to a fuel oil that has a maximum sulfur content of 0.50% by weight; ultra-low sulfur fuel oil ("ULSFO") refers to a fuel oil that has a maximum sulfur content of 0.10% by weight; and high sulfur fuel oil ("HSFO") refers to a fuel oil that has a sulfur content of more than 0.50% by weight. MEPC 320(74). Accordingly, LSFO and VLSFO are used interchangeably herein with respect to sulfur content.

55. On a February 4, 2020 earnings call, Jeff Dietert, Phillips' Vice President of Investor Relations, confirmed that "some refining projects that allow [Phillips] to upgrade over *30,000 barrels a day* of *high-sulfur fuel oil* to *very low sulfur,* sub 0.5% blend stock. [Phillips] accomplished this late *last year* and think there's actually some upside to those volumes, so we are moving some *very low-sulfur product into the market.* . . . We've also been able to bring *high-sulfur material* in as a *feedstock* for our processing units." *See* Exhibit 16, Q4 2019 Transcript (January 31, 2020) at 17-18 (emphases added).

RESPONSE: Admit.

56. On information and belief, given the interaction between Rigby Refining and Phillips, including multiple presentations pertaining to the technology, Phillips copied the patent-pending invention, likely hoping that the PTO would never issue the patents and/or that Magēmā would never assert its intellectual property rights, and implemented the patented technology in at least its Wood River Refinery and Bayway Refinery.

RESPONSE: Deny.

57. Despite Magēmā's best efforts, Phillips has not responded to Magēmā's repeated inquiries pertaining to the Magēmā Patents.

RESPONSE: Deny.

COUNT I: Infringement of the '884 Patent

58. Magēmā re-alleges and incorporates by reference each of the allegations in the preceding paragraphs as if fully set forth herein.

RESPONSE: Defendants incorporate by reference each of the responses to the preceding paragraphs.

59. On information and belief, Phillips and WRB have been, are now, and will continue making, using, supplying, trading, selling, and/or offering to sell infringing LSFO products, including the LSFO product described in Phillips' VLSFO SDS and/or LSFO products produced through the implementation of the LSFO hydrotreater projects in at least the Wood River Refinery (Phillips 66, Phillips 66 Company and WRB) and the Bayway Refinery (Phillips 66 and Phillips 66 Company) (the "Accused Products").

RESPONSE: Deny.

60. On information and belief, Phillips has been, is now, and will continue directly infringing—literally and/or under the doctrine of equivalents—at least Claim 1 of the '884 Patent, in violation of 35 U.S.C. § 271 *etseq.,* by making, using (including supplying and trading), selling and/or offering to sell the Accused Products in the United States.

RESPONSE: Deny.

61. On information and belief, WRB has been, is now, and will continue directly infringing—literally and/or under the doctrine of equivalents—at least Claim 1 of the '884 Patent, in violation of 35 U.S.C. § 271 *et seq.,* by making, using (including supplying and trading), selling and/or offering to sell the Accused Products in the United States.

RESPONSE: Deny.

62. Claim 1 of the '884 Patent is reproduced below:

> 1. A low sulfur heavy marine fuel oil, consisting essentially of a 100% hydroprocessed high sulfur heavy marine fuel oil, wherein prior to hydroprocessing the high sulfur heavy marine fuel oil is compliant with ISO 8217:2017 and is of merchantable quality as a residual marine fuel oil but has a sulfur content (ISO 14596 or ISO 8754) greater than 0.5% wt. and wherein the low sulfur heavy marine fuel oil is compliant with ISO 8217:2017 and is of merchantable quality as a residual marine fuel oil and has a sulfur content (ISO 14596 or ISO 8754) less than 0.5 wt%.

RESPONSE: Admit.

63. Phillips' VLSFO is a low sulfur heavy marine fuel oil, having a sulfur content of less than 0.5 wt %. *See, e.g.,* Exhibit 15 (SDS Very Low Sulfur Fuel Oil). Phillips describes VLSFO as comprised of "100%" "Fuel oil, no. 6." *Id.* at 2. On information and belief, Phillips' VLSFO is not blended with distillate, or distillate-like, hydrocarbons. *See, e.g., id.*[8]

RESPONSE: Defendants admit that the marine fuel oil described in Exhibit 15 has a sulfur content of less than 0.5% wt % and that the fuel oil is described as being composed of 100% Fuel oil, no. 6. Defendants deny the remaining allegations set forth in this paragraph.

64. Phillips has at least two LFSO hydrotreater projects, the "Wood River LSFO hydrotreater project" and the "Bayway LSFO hydrotreater project." Exhibit 13 (Slides delivered at the 2019 Energy Conference on June 18, 2019) at 13. Phillips' LSFO hydrotreater projects allow it to take "high sulfur *fuel oil"* and "turn it into" "low sulfur *fuel oil*." *See, e.g.,* Exhibit 14 (November 6, 2019 Investor Day Transcript) at 20 (emphases added); Exhibit 17 (Q3 2019 Earnings Conference Call Transcript (Oct. 25, 2019)) at 16; Exhibit 16 (Q4 2019 Earnings

[8] To the extent that Phillips and/or WRB makes, uses, offers to sells, or sells a blend having a majority by volume of the Accused Products, such a blend would infringe Claim 5 of the '884 Patent.

Conference Call Transcript (January 31, 2020)) at 17-18. The industry uses the term "high sulfur" to refer to fuels having greater than 0.50% wt sulfur. *See* IMO's 2019 Guidelines.

RESPONSE: Admit.

65. In its permit applications for the Wood River Refinery LFSO hydrotreater, Phillips described to the Illinois EPA that its "International Maritime Organization (IMO) Fuel Treatment Project would enable the refinery to produce *lower sulfur No. 6 Fuel Oil* for use in marine vessels that would meet *new IMO standards for the sulfur content of fuel oil*" Exhibit 8 (March 2018 Fuel Treatment Project Summary) at 2 (emphasis added). On information and belief, the only IMO-compliant lower sulfur No. 6 Fuel Oil Phillips produces is VLSFO. *See, e.g.,* Exhibit 15 (Safety Data Sheet ("SDS") Very Low Sulfur Fuel Oil).

RESPONSE: Defendants deny that the VLSFO is IMO-compliant, but otherwise admits the allegations.

66. As of the filing of this Complaint, Phillips has two current SDSs for 100% "Fuel Oil No. 6" products. The first SDS is for a HSFO No. 6 product that has a total sulfur content of "<= 3.5 wt%." Exhibit 18 (SDS HSFO). The second SDS is for a VLSFO No. 6 that contains 100% Fuel Oil No. 6 but has a total sulfur content of "less than 0.5 wt%." Exhibit 15 (SDS Very Low Sulfur Fuel Oil). On information and belief, Phillips is hydroprocessing a HSFO to make a VLSFO. *See, e.g.,* Exhibit 14 (November 6, 2019 Investor Day Transcript) at 20; Exhibit 17 (Q3 2019 Transcript (Oct. 25, 2019)) at 16; Exhibit 16 (Q4 2019 Transcript (January 31, 2020)) at 1718.

RESPONSE: Defendants admit that Phillips has two current SDSs for 100% "Fuel Oil No. 6" products, that the first SDS is for a HSFO No. 6 product that has a total sulfur content of <= 3.5 wt%., and that the second SDS is for a VLSFO No. 6 that contains 100% Fuel Oil No. 6 but has a total sulfur content of "less than 0.5 wt%." Defendants deny the remaining allegations set forth in this paragraph.

67. Phillips' SDSs further indicate that both HSFO and VLSFO are of merchantable quality as a residual marine fuel oil. *See* www.phillips66.com/customers (providing "[s]afety Data Sheets for all current, *commercially sold* or *traded* products," including the above-mentioned SDSs.) (emphases added). Moreover, on information and belief, to the extent that Phillips purchases third party HSFO to use as its feedstock, the fuel oil is of merchantable quality as a residual marine fuel oil, as it is sold as a HSFO.

RESPONSE: Deny.

68. Phillips' current Marine Fuels Sales Addendum [9] (Exhibit 19) provides that "Seller's fuel grades will conform to ISO 8217 specifications." In addition, IMO recognizes that "[t]he bunker market uses ISO 8217:2017 specifications to ensure that the properties of the fuels it delivers conform to a standard that mean they comply with MARPOL Annex VI."[10] Moreover, IMO suggests that "ship operators could consider ordering fuel oil specified in accordance with

[9] Phillips' Marine Fuels Sales Addendum is *available at* https://www.phillips66.com/customers-site/Documents/Phillips%2066%20Marine%20Fuels%20Sales%20Addendum.pdf.

[10] IMO's 2019 Guidelines on consistent implementation of 0.50% sulfur limit under MARPOL Annex VI, MEPC 320(74) *available at* http://www.imo.org/en/OurWork/Environment/PollutionPrevention/Documents/Resolution%20MEPC.320%2874%29.pdf ("IMO's 2019 Guidelines")

the ISO 8217 marine fuel standard."[11] On information and belief, the SDSs together with the Sales Addendum and industry practices indicate that the HSFO and VLSFO products meet ISO 8217 specifications. Further, on information and belief, to the extent that Phillips purchases third party HSFO to use in its LSFO hydrotreaters, industry practices, at least, reasonably support that such fuel oil meets ISO 8217 specifications.

RESPONSE: Defendants admit that this paragraph reproduces portions of Exhibits 19, the IMO 2019 Guidelines, and the IMO's Guidamce. Defendants deny the remaining allegations set forth in this paragraph.

69. On information and belief, Phillips has indirectly infringed, and is currently indirectly infringing, at least claim 1 of the '884 Patent in violation of 35 U.S.C. § 271 *et seq.,* by inducing—as the operator and managing partner of WRB—WRB to make, use (including supply and trade), sell and/or offer to sell the Accused Products in an infringing manner and/or contributing to such infringement with knowledge that its actions are infringing acts, as discussed in the preceding section.

RESPONSE: Deny.

70. Phillips and WRB are not licensed, or otherwise authorized, by Magēmā to make, use, import, sell, or offer to sell any products covered by the '884 Patent, and Phillips' and WRB's conduct is, in every instance, without Magēmā's consent.

[11] IMO's Guidance on the development of a ship implementation plan for the consistent implementation of the 0.50% Sulfur limit under MARPOL ANNEX VI, *available at* http://www.imo.org/en/OurWork/Environment/PollutionPrevention/Documents/MEPC.1- Circ.878.pdf ("IMO's Guidance")

RESPONSE: Admit.

71. Phillips' and WRB's infringement of the '884 Patent has been willful, as described herein. On information and belief, Phillips was aware of the Magēmā patent application that issued as the Magēmā Patents as early as April 2017. At the latest, Phillips became aware of the '884 Patent on or around June 2019, when Mr. Moore notified Phillips 66 of the issuance of the '884 Patent as well as the pendency of the other applications that issued as the Magēmā Patents. Accordingly, Phillips—and WRB through Phillips—had pre-suit knowledge of the Magēmā Patents.

RESPONSE: Defendants admit that Mr. Moore notified Phillips 66 of the issuance of the '884 Patent on or around June 2019 and other pending applications. Defendants deny the remaining allegations set forth in this paragraph.

72. Phillips and WRB have further been aware of the '884 Patent since at least the filing date of this Complaint.

RESPONSE: Admit.

73. Phillips and WRB has acted egregiously in continuing directly and indirectly infringing the Magēmā Patents despite receiving notice of the Magēmā Patents, with full knowledge of the Magēmā Patents' applicability to the Accused Products.

RESPONSE: Deny.

74. Phillips' and WRB's continued infringement has damaged and will continue to damage Magēmā. Magēmā is entitled to damages adequate to compensate for the infringement, but in no event less than a reasonable royalty as provided for in 35 U.S.C. § 284.

RESPONSE: Deny.

75. Because of Phillips' and WRB's willful infringement of the '884 Patent, any damages assessed against Phillips and WRB should be increased up to three times the amount found. As a result of the willful infringement, this is an exceptional case, and Magēmā should, pursuant to 35 U.S.C. § 285, be awarded its reasonable attorney fees in having to pursue this infringement.

RESPONSE: Deny.

76. Due to Phillips' and WRB's infringement of the '884 Patent, Magēmā has suffered, is suffering, and will continue to suffer irreparable injury and damage for which Magēmā has no adequate remedy at law. In contrast, Phillips has reported that its refineries are capable of "swinging" production from one product to another product. Accordingly, the harm posed by an injunction to Phillips and WRB is minimal. Magēmā is therefore entitled to a permanent injunction against Phillips' and WRB's continued infringement.

RESPONSE: Deny.

COUNT II: Infringement of the '141 Patent

77. Magēmā re-alleges and incorporates by reference each of the allegations in the preceding paragraphs as if fully set forth herein.

RESPONSE: Defendants incorporate by reference each of the responses to the preceding paragraphs.

78. On information and belief, Phillips has been, is now, and will continue directly infringing—literally and/or under the doctrine of equivalents—at least Claim 1 of the '141 Patent, in violation of 35 U.S.C. § 271 *et seq.,* at least by using and practicing each step of the claimed processes at its refineries, including but not limited to, at its Wood River Refinery and Bayway Refinery.

RESPONSE: Deny.

79. On information and belief, WRB has been, is now, and will continue directly infringing—literally and/or under the doctrine of equivalents—at least Claim 1 of the '141 Patent, in violation of 35 U.S.C. § 271 *et seq.,* at least by using and practicing each step of the claimed processes at its refineries, including but not limited to, at its Wood River Refinery.

RESPONSE: Deny.

80. Claim 1 of the '141 Patent is reproduced below:

A process for treating high sulfur Heavy Marine Fuel Oil for use as feedstock in a subsequent refinery unit, the process comprising:

mixing a quantity of Feedstock Heavy Marine Fuel Oil with a quantity of Activating Gas mixture to give a Feedstock Mixture;

contacting the Feedstock Mixture with one or more catalysts under reactive conditions to form a Process Mixture from said Feedstock Mixture;

receiving said Process Mixture and separating hydrocarbon liquid components of the Process Mixture from any bulk gaseous components of the Process Mixture;

subsequently separating any residual gaseous components and any byproduct hydrocarbon components from the hydrocarbon liquid components to give a Product Heavy Marine Fuel Oil;

and, discharging the Product Heavy Marine Fuel Oil,

wherein the Feedstock Heavy Marine Fuel Oil complies with ISO 8217 (2017) and has a sulfur content (ISO 14596 or ISO 8754) between the range of 5.0 mass *%* to 1.0 mass %, and wherein said Feedstock Heavy Marine Fuel Oil has a maximum of kinematic viscosity at 50° C (ISO 3104) between the range from 180 mm^2/s to 700 mm^2/s; a maximum of density at 15° C. (ISO 3675) between the range of 991.0 kg/m^3 to 1010.0 kg/m^3; a CCAI in the range of 780 to 870; a flash point (ISO 2719) no lower than 60° C; a total sediment aged (ISO 10307-2) of less than 0.10 mass %; a carbon residue micro method (ISO 10370) less than 20.00 mass % and

wherein the Product Heavy Marine Fuel Oil has a sulfur content (ISO 14596 or ISO 8754) between the range of 0.50 mass % to 0.05 mass % and wherein said Product Heavy Marine Fuel Oil has a maximum of kinematic viscosity at 50° C (ISO 3104) between the range from 180 mm^2/s to 700 mm^2/s; a maximum of density at 15° C (ISO 3675) between the range of 991.0 kg/m^3 to 1010.0 kg/m^3; a CCAI in the range of 780 to 870; a flash point (ISO 2719) no lower than 60° C; a total sediment aged (ISO 10307-2) of less than 0.10 mass %; a carbon residue micro method (ISO 10370) less than 20.00 mass%.

RESPONSE: Admit.

81. Phillips and WRB use a "high-sulfur material" "as a feedstock for [its] processing units." Exhibit 16 (Q4 2019 Transcript (January 31, 2020)) at 11, 17-18. Phillips represented to the Illinois EPA that it "receive[s] *high sulfur* fuel oil as a *feedstock* for reprocessing" at the Wood River Refinery. Exhibit 10 (April 2019 HSFO as Feed Permit) at Section 1.1 (emphases added). The industry uses the term "high sulfur" to refer to fuels having greater than 0.50 mass % (wt %) sulfur. *See* IMO's 2019 Guidelines. Phillips also represented that the Wood River LSFO hydrotreater project "would enable the petroleum refinery to *remove* sulfur compounds *from fuel* to be used on marine vessels so that the fuel would meet new IMO fuel standards." Exhibit 8 (March 2018 Fuel Treatment Project Summary) at Section 1 (emphases added).

RESPONSE: Admit.

82. Phillips has identified two LSFO hydrotreater projects, the "Wood River LSFO hydrotreater project" and the "Bayway LSFO hydrotreater project." *See* Exhibit 13 (Slides delivered at the 2019 Energy Conference on June 18, 2019) at 13. On information and belief, the modifications made in connection with the Wood River LSFO hydrotreater project—as reflected in the permit applications—were similarly made as part of the Bayway LSFO hydrotreater project.

RESPONSE: Defendants admit that they have identified the Wood River LSFO hydrotreater project and the Bayway LSFO hydrotreater project. Defendants deny the remaining allegations set forth in this paragraph.

83. On information and belief, Phillips' and WRB's LSFO hydrotreater refineries mix at least hydrogen (an activating gas) with the feedstock. Phillips described its Wood River Refinery "hydrogen plant, which supplies hydrogen to the ULD2 Unit that is needed for the desulfurization process and the sulfur recovery units, which then collects this sulfur." Exhibit 8 (March 2018 Fuel Treatment Project Summary) at 2. Similarly, Phillips stated "[o]ther existing emission units at the refinery would be affected by this project, including . . . the hydrogen plant . . . This is because when ULD2 is *processing fuel oil* rather than ultra-low sulfur diesel, *additional hydrogen is required*. . . ." Exhibit 20 (April 2019 Project Summary) at 2 (emphases added).

RESPONSE: Defendants admit the quoted language appears in the permit application, but deny the remaining allegations in the paragraph.

84. On information and belief, Phillips' and WRB's LSFO hydrotreater refineries contact the feedstock with one or more catalysts. As described in its permit applications, the Wood

River refinery uses its LSFO hydrotreaters for a "desulfurization process,"[12] which use catalysts to facilitate the removal of sulfur. *See* Exhibit 8 (March 2018 Fuel Treatment Project Summary) at 2.

RESPONSE: Defendants admit that they use catalyst to facilitate the removal of sulphur, but deny the remaining allegations.

85. On information and belief, Phillips' and WRB's LSFO hydrotreater refineries separate hydrocarbon liquid components from bulk gaseous components. The Wood River Refinery uses at least one process heater and/or at least one cooling tower to separate hydrocarbon liquid components from any bulk gaseous components. Exhibit 7 (March 2018 Permit); Exhibit 21 (April 2019 Permit).

RESPONSE: Admit.

86. On information and belief, Phillips' and WRB's LSFO hydrotreater refineries separate residual gaseous components and byproduct hydrocarbons. The Wood River Refinery uses at least one process heater and/or at least one cooling tower to separate residual gaseous components and any byproduct hydrocarbons. Exhibit 7 (March 2018 Permit); Exhibit 21 (April 2019 Permit).

RESPONSE: Admit.

[12] *See* Exhibit 22 (Robinson, et al., Hydrotreating and Hydrocracking: Fundamentals (Oct. 2007)) at Section 4.2 and 5, describing the desulfurization process.

87. Phillips' and WRB's LSFO hydrotreater refineries discharge LSFO products, including VLSFO, which has a total sulfur content of "less than 0.5 wt%." *See, e.g.,* Exhibit 15 (SDS Very Low Sulfur Fuel Oil) at 2.

RESPONSE: Deny.

88. Phillips' current Marine Fuels Sales Addendum (Exhibit 19) provides that "Seller's fuel grades will conform to ISO 8217 specifications." In addition, IMO recognizes that "[t]he bunker market uses ISO 8217:2017 specifications to ensure that the properties of the fuels it delivers conform to a standard that mean they comply with MARPOL Annex VI."[13] Moreover, IMO suggests that "ship operators could consider ordering fuel oil specified in accordance with the ISO 8217 marine fuel standard."[14] On information and belief, the SDSs together with the Sales Addendum and industry practices indicate that the HSFO and VLSFO products meet ISO 8217 specifications. Further, on information and belief, to the extent that Phillips purchases third party HSFO to use as feedstock in its LSFO hydrotreaters, industry practices, at least, reasonably support that such fuel oil meets ISO 8217 specifications.

RESPONSE: Defendants admit that this paragraph reproduces portions of Exhibits 19, the IMO 2019 Guidelines, and the IMO's Guidamce. Defendants deny the remaining allegations set forth in this paragraph.

89. An ISO 8217 compliant fuel oil has a maximum of kinematic viscosity at 50° C (ISO 3104) between the range from 180 mm^2/s to 700 mm^2/s, a maximum of density at 15° C.

[13] IMO's 2019 Guidelines.
[14] IMO's Guidance.

(ISO 3675) between the range of 991.0 kg/m^3 to 1010.0 kg/m^3, a CCAI in the range of 780 to 870, a flash point (ISO 2719) no lower than 60° C, a total sediment aged (ISO 10307-2) of less than 0.10 mass %, and a carbon residue micro method (ISO 10370) less than 20.00 mass %. *See* Exhibit 5 (ISO 8217 Table).

RESPONSE: Deny.

90. On information and belief, Phillips has indirectly infringed, is currently indirectly infringing, and will continue indirectly infringing at least claim 1 of the '141 Patent in violation of 35 U.S.C. § 271 *et seq.,* by inducing—as the operator of the Wood River Refinery and as the managing partner of WRB—WRB to use and to practice the patented processes and/or contributing to such infringement with knowledge that its actions are infringing acts, as discussed in the preceding section.

RESPONSE: Deny.

91. Phillips and WRB are not licensed or otherwise authorized by Magēmā to use or practice the claimed processes of the '141 Patent, and Phillips' and WRB's conduct is, in every instance, without Magēmā's consent.

RESPONSE: Admit.

92. Phillips' and WRB's infringement of the ' 141 Patent has been willful, as described herein. On information and belief, Phillips was aware of the Magēmā patent applications that issued as the Magēmā Patents as early as April 2017. At the latest, Phillips became aware of the '141 Patent on or around June 2019, when Mr. Moore notified Phillips 66 of the issuance of the

‘884 Patent as well as the pendency of the other applications that issued as the Magēmā Patents (which included the ‘141 Patent). Accordingly, Phillips—and WRB through Phillips—had presuit knowledge of the Magēmā Patents.

RESPONSE: Deny.

93. Phillips and WRB have further been aware of the ‘141 Patent since at least the filing date of this Complaint.

RESPONSE: Admit.

94. Phillips and WRB has acted egregiously in continuing directly and indirectly infringing the Magēmā Patents despite receiving notice of the Magēmā Patents, with full knowledge of the Magēmā Patents’ applicability to the LSFO hydrotreater projects.

RESPONSE: Deny.

95. Phillips’ and WRB’s continued infringement has damages and will continue to damage Magēmā. Magēmā is entitled to damages adequate to compensate for the infringement, but in no event less than a reasonable royalty as provided for in 35 U.S.C. § 284.

RESPONSE: Deny.

96. Because of Phillips’ and WRB’s willful infringement of the ‘141 Patent, any damages assessed against Phillips and WRB should be increased up to three times the amount found. As a result of the willful infringement, this is an exceptional case, and Magēmā should,

pursuant to 35 U.S.C. § 285, be awarded its reasonable attorney fees in having to pursue this infringement.

RESPONSE: Deny.

97. Due to Phillips' and WRB's infringement of the ' 141 Patent, Magēmā has suffered, is suffering, and will continue to suffer irreparable injury and damage for which Magēmā has no adequate remedy at law. In contrast, Phillips has reported that its refineries are capable of "swinging" production from one product to another product. Accordingly, the harm posed by an injunction to Phillips and WRB is minimal. Magēmā is therefore entitled to a permanent injunction against Phillips' and WRB's continued infringement.

RESPONSE: Deny.

COUNT III: Infringement of the '709 Patent

98. Magēmā re-alleges and incorporates by reference each of the allegations in the preceding paragraphs as if fully set forth herein.

RESPONSE: Defendants incorporate by reference each of the responses to the preceding paragraphs.

99. On information and belief, Phillips has been, is now, and will continue directly infringing—literally and/or under the doctrine of equivalents—at least Claim 1 of the '709 Patent, in violation of 35 U.S.C. § 271 *et seq.,* at least by using and practicing each step of the claimed processes at its refineries, including but not limited to, at its Wood River Refinery and Bayway Refinery.

RESPONSE: Deny.

100. On information and belief, WRB has been, is now, and will continue directly infringing—literally and/or under the doctrine of equivalents—at least Claim 1 of the '709 Patent, in violation of 35 U.S.C. § 271 *et seq.,* at least by using and practicing each step of the claimed processes at its refineries, including but not limited to, at its Wood River Refinery.

RESPONSE: Deny.

101. Claim 1 of the '709 Patent is reproduced below:

1. A process for production of a Product Heavy Marine Fuel Oil from Distressed Fuel Oil Materials, the process comprising:

processing the Distressed Fuel Oil Materials in a pre-treatment unit under operative conditions to give a pre-treated Feedstock Heavy Marine Fuel Oil, and wherein the pre-treatment unit is selected from the group comprising: steam stripper column; a distillation column; a divided wall distillation column; a reactive distillation column; a countercurrent extraction unit, a fixed bed absorption unit, a solids separation unit, a blending unit; and combinations thereof,

wherein the pre-treated Feedstock Heavy Marine Fuel Oil complies with ISO 8217 except for the environmental contaminates including a sulfur content (ISO 14596 or ISO 8754) between the range of 5.0 wt % to 0.50 wt %;

mixing a quantity of the pre-treated Feedstock Heavy Marine Fuel Oil with a quantity of Activating Gas mixture to give a Feedstock Mixture;

contacting the Feedstock Mixture with one or more transition metal catalysts under reactive conditions to form a Process Mixture from said Feedstock Mixture;

receiving said Process Mixture and separating Product Heavy Marine Fuel Oil liquid components of the Process Mixture from gaseous components and byproduct hydrocarbon components of the Process Mixture and,

discharging the Product Heavy Marine Fuel Oil.

RESPONSE: Admit.

102. On information and belief, Phillips and WRB are processing Distressed Fuel Oil Materials in Vacuum Flasher No. 5. *See* Exhibit 10 (April 2019 HSFO as Feed Permit) at 2, 7. To the extent that the feedstock to Vacuum Flasher No. 5 is not compliant with ISO 8217, then it is Distressed Fuel Oil. Vacuum Flasher No. 5 is a distillation column, which is a pre-treatment unit. *See* Exhibit 10 (April 2019 HSFO as Feed Permit) at 2, 7.

RESPONSE: Deny.

103. Phillips and WRB use a "high-sulfur material" "as a feedstock for [its] processing units." Exhibit 16 (Q4 2019 Transcript (January 31, 2020)) at 11, 17-18. Phillips represented to the Illinois EPA that it "receive[s] *high sulfur* fuel oil as a *feedstock* for reprocessing." Exhibit 10 (April 2019 HSFO as Feed Permit) at Section 1.1 (emphases added). The industry uses the term "high sulfur" to refer to fuels having greater than 0.50 wt % sulfur. *See* IMO's 2019 Guidelines. Moreover, Phillips also represented the Wood River LSFO hydrotreater project "would enable the petroleum refinery to *remove* sulfur compounds *from fuel* to be used on marine vessels so that the fuel would meet new IMO fuel standards." Exhibit 7 (March 2018 Permit) at Paragraph 1 (emphases added).

RESPONSE: Admit, except that the final quote comes from Exhibit 8, not Exhibit 7.

104. On information and belief, Phillips' and WRB's LSFO hydrotreater refineries mix at least hydrogen (an activating gas) with the feedstock. Phillips described the Wood River Refinery "hydrogen plant, which supplies hydrogen to the ULD2 Unit that is needed for the desulfurization process and the sulfur recovery units, which then collects this sulfur." Exhibit 8 (March 2018 Fuel Treatment Project Summary) at 2. Similarly, Phillips also stated "[o]ther

existing emission units at the refinery would be affected by this project, including . . . the hydrogen plant . . . This is because when ULD2 is *processing fuel oil* rather than ultra-low sulfur diesel, *additional hydrogen is required* . . . .” Exhibit 20 (April 2019 Project Summary) at 2 (emphases added).

RESPONSE: Defendants admit the quoted language appears in its permit application, but deny the remaining allegations in the paragraph.

105. On information and belief, Phillips’ and WRB’s LSFO hydrotreater refineries contact the feedstock with one or more catalysts. As described in its permit applications, Phillips uses its LSFO hydrotreaters for a “desulfurization process,”[15] which use catalysts to facilitate the removal of sulfur. *See* Exhibit 8 (March 2018 Fuel Treatment Project Summary).

RESPONSE: Defendants admit that they use catalyst to facilitate the removal of sulphur, but deny the remaining allegations.

106. On information and belief, Phillips’ and WRB’s LSFO hydrotreater refineries separate hydrocarbon liquid components from bulk gaseous components. The Wood River Refinery uses at least one process heater and/or at least one cooling tower to separate hydrocarbon liquid components from bulk gaseous components. Exhibit 7 (March 2018 Permit); Exhibit 21 (April 2019 Permit).

RESPONSE: Admit.

[15] *See* Exhibit 22 (Robinson, et al., Hydrotreating and Hydrocracking: Fundamentals (Oct. 2007)) at Section 4.2 and 5, describing the desulfurization process including catalysts.

107. On information and belief, Phillips' and WRB's LSFO hydrotreater refineries separate residual gaseous components and byproduct hydrocarbons. The Wood River Refinery uses at least one process heater and/or at least one cooling tower to separate residual gaseous components and byproduct hydrocarbons. Exhibit 7 (March 2018 Permit); Exhibit 21 (April 2019 Permit).

RESPONSE: Admit.

108. Phillips' and WRB's LSFO hydrotreater refineries discharge LSFO products, including VLSFO, which has a total sulfur content of "less than 0.5 wt%." *See, e.g.,* Exhibit 15 (SDS Very Low Sulfur Fuel Oil).

RESPONSE: Deny.

109. Phillips' current Marine Fuels Sales Addendum (Exhibit 19) provides that "Seller's fuel grades will conform to ISO 8217 specifications." In addition, IMO recognizes that "[t]he bunker market uses ISO 8217:2017 specifications to ensure that the properties of the fuels it delivers conform to a standard that mean they comply with MARPOL Annex VI."[16] Moreover, IMO suggests that "ship operators could consider ordering fuel oil specified in accordance with the ISO 8217 marine fuel standard."[17] On information and belief, the SDSs together with the Sales Addendum and industry practices indicate that the HSFO and VLSFO products meet ISO 8217 specifications. Further, on information and belief, to the extent that Phillips purchases third party

[16] IMO's 2019 Guidelines.
[17] IMO's Guidance.

HSFO to use as feedstock for the LSFO hydrotreater refineries, industry practices, at least, reasonably support that such fuel oil meets ISO 8217 specifications.

RESPONSE: Defendants admit that this paragraph reproduces portions of Exhibits 19, the IMO 2019 Guidelines, and the IMO's Guidamce. Defendants deny the remaining allegations set forth in this paragraph.

110. On information and belief, Phillips has indirectly infringed, is currently indirectly infringing, and will continue indirectly infringing at least claim 1 of the '709 Patent in violation of 35 U.S.C. § 271 *et seq.,* by inducing—as the operator of the Wood River Refinery and as the managing partner of WRB—WRB to use and to practice the patented processes and/or contributing to such infringement with knowledge that their actions are infringing acts, as discussed in the preceding section.

RESPONSE: Deny.

111. Phillips and WRB are not licensed or otherwise authorized by Magēmā to use or practice the claimed processes of the '709 Patent, and Phillips' and WRB's conduct is, in every instance, without Magēmā's consent.

RESPONSE: Admit.

112. Phillips' and WRB's infringement of the '709 Patent has been willful, as described herein. On information and belief, Phillips was aware of the Magēmā patent applications that issued as the Magēmā Patents as early as April 2017. At the latest, Phillips became aware of the '709 Patent on or around June 2019, when Mr. Moore notified Phillips 66 of the issuance of the

'884 Patent as well as the pendency of the other applications that issued as the Magēmā Patents (which included the '709 Patent). Accordingly, Phillips—and WRB through Phillips—had pre-suit knowledge of the Magēmā Patents.

RESPONSE: Deny.

113. Phillips and WRB have further been aware of the '709 Patent since at least the filing date of this Complaint.

RESPONSE: Admit.

114. Phillips and WRB has acted egregiously in continuing directly and indirectly infringing the Magēmā Patents despite receiving notice of the Magēmā Patents, with full knowledge of the Magēmā Patents' applicability to the LSFO hydrotreater projects.

RESPONSE: Deny.

115. Phillips' and WRB's continued infringement has damages and will continue to damage Magēmā. Magēmā is entitled to damages adequate to compensate for the infringement, but in no event less than a reasonable royalty as provided for in 35 U.S.C. § 284.

RESPONSE: Deny.

116. Because of Phillips' and WRB's willful infringement of the '709 Patent, any damages assessed against Phillips and WRB should be increased up to three times the amount found. As a result of the willful infringement, this is an exceptional case, and Magēmā should,

pursuant to 35 U.S.C. § 285, be awarded its reasonable attorney fees in having to pursue this infringement.

RESPONSE: Deny.

117. Due to Phillips' and WRB's infringement of the '709 Patent, Magēmā has suffered, is suffering, and will continue to suffer irreparable injury and damage for which Magēmā has no adequate remedy at law. In contrast, Phillips has reported that its refineries are capable of "swinging" production from one product to another product. Accordingly, the harm posed by an injunction to Phillips and WRB is minimal. Magēmā is therefore entitled to a permanent injunction against Phillips' and WRB's continued infringement.

RESPONSE: Deny.

COUNT IV: Infringement of the '287 Patent

118. Magēmā re-alleges and incorporates by reference each of the allegations in the preceding paragraphs as if fully set forth herein.

RESPONSE: Defendants incorporate by reference each of the responses to the preceding paragraphs.

119. On information and belief, Phillips and WRB have been, is now, and will continue using, supplying, trading, selling, and/or offering to sell the Accused Products.

RESPONSE: Deny.

120. On information and belief, Phillips has been, is now, and will continue directly infringing—literally and/or under the doctrine of equivalents—at least Claim 1 of the '287 Patent, in violation of 35 U.S.C. § 271 *etseq.,* by making, using (including supplying and trading), selling and/or offering to sell the Accused Products in the United States.

RESPONSE: Deny.

121. On information and belief, WRB has been, is now, and will continue directly infringing—literally and/or under the doctrine of equivalents—at least Claim 1 of the '287 Patent, in violation of 35 U.S.C. § 271 *et seq.,* by making, using (including supplying and trading), selling and/or offering to sell the Accused Products in the United States.

RESPONSE: Deny.

122. Claim 1 of the '287 Patent is reproduced below:

1. A heavy marine fuel oil product that is ISO 8217:2017 compliant for a residual marine fuel, and is of merchantable quality as such, and has a sulfur content (ISO 14596 or ISO 8754) less than 0.5 wt %, and is made from a heavy marine fuel oil that is ISO 8217:2017 compliant that has a sulfur content (ISO 14596 or ISO 8754) greater than 0.5% wt., said product being produced by a process comprising:

a) combining a predetermined quantity of the heavy marine fuel oil with a predetermined amount of an Activating Gas to form a Feedstock Mixture;

b) bringing the Feedstock Mixture up to predetermined process conditions of temperature and pressure to form a heated and pressurized Feedstock Mixture;

c) contacting said heated and pressurized Feedstock Mixture in at least one reactor vessel with one or more catalyst systems selected from the group consisting of: an ebulliated bed supported transition metal heterogeneous catalyst, a fixed bed supported transition metal heterogeneous catalyst, and a combination of ebulliated bed supported transition metal heterogeneous catalysts and fixed bed supported transition metal heterogeneous catalysts, wherein said contacting takes place under reactive process conditions to form a Process Mixture;

d) removing the Process Mixture from being in contact with the one or more catalyst systems in the at least one reactor vessel and sending the Process Mixture via fluid communication from the at least one reactor vessel to at least one second vessel for separating the Liquid Components of the Process Mixture from the Gaseous Components of the Process Mixture;

e) sending by fluid communication the Liquid Components of the Process Mixture from the at least one second vessel to at least one third vessel, and removing from the Liquid Components of the Process Mixture any residual gaseous components and any byproduct hydrocarbon components to form said heavy marine fuel oil product; and,

f) discharging from said at least one third vessel said heavy marine fuel oil product.

RESPONSE: Admit.

123. Phillips' VLSFO is a low sulfur heavy marine fuel oil, having a sulfur content of less than 0.5 wt%. *See, e.g.,* Exhibit 15 (SDS Very Low Sulfur Fuel Oil).

RESPONSE: Deny.

124. Phillips has at least two LFSO hydrotreater projects, the "Wood River LSFO hydrotreater project" and the "Bayway LSFO hydrotreater project." Exhibit 13 (Slides delivered at the 2019 Energy Conference on June 18, 2019). Phillips' LSFO hydrotreater projects allow it to take "high sulfur *fuel oil"* and "turn it into" "low sulfur *fuel oil See, e.g.,* Exhibit 14 (November 6, 2019 Investor Day Transcript) at 20 (emphases added); Exhibit 17 (Q3 2019 Transcript (Oct. 25, 2019)) at 16; Exhibit 16 (Q4 2019 Transcript (January 31, 2020)) at 17-18.

RESPONSE: Admit.

125. Phillips and WRB use a "high-sulfur material" "as a feedstock for [its] processing units." Exhibit 16 (Q4 2019 Transcript (January 31, 2020)) at 11, 17-18. Phillips represented to the Illinois EPA that it "receive[s] *high sulfur* fuel oil as a *feedstock* for reprocessing." Exhibit 10

(April 2019 HSFO as Feed Permit) at Section 1.1 (emphases added). The industry uses the term "high sulfur" to refer to fuels having greater than 0.50 wt % sulfur. *See* IMO's 2019 Guidelines. Moreover, Phillips also represented the Wood River LSFO hydrotreater project "would enable the petroleum refinery to *remove* sulfur compounds *from fuel* to be used on marine vessels so that the fuel would meet new IMO fuel standards." Exhibit 7 (March 2018 Permit) at Paragraph 1 (emphases added).

RESPONSE: Admit.

126. On information and belief, Phillips' and WRB's LSFO hydrotreater refineries mix at least hydrogen (an activating gas) with the feedstock. Phillips described the Wood River Refinery "hydrogen plant, which supplies hydrogen to the ULD2 Unit that is needed for the desulfurization process and the sulfur recovery units, which then collects this sulfur." Exhibit 8 (March 2018 Fuel Treatment Project Summary) at 2. Similarly, Phillips also stated "[o]ther existing emission units at the refinery would be affected by this project, including . . . the hydrogen plant . . . This is because when ULD2 is *processing fuel oil* rather than ultra-low sulfur diesel, *additional hydrogen is required* . . . ." Exhibit 11 (April 2019 Project Summary) at 2 (emphases added).

RESPONSE: Defendants admit the quoted language appears in its permit application, but deny the remaining allegations.

127. On information and belief, Phillips' and WRB's LSFO hydrotreater refineries contact the feedstock with one or more catalysts. As described in its permit applications, Phillips

uses its LSFO hydrotreaters for a "desulfurization process,"[18] which, on information and belief, use fixed bed supported transition metal heterogeneous catalyst. Exhibit 8 (March 2018 Fuel Treatment Project Summary).

RESPONSE: Defendants admit that they use catalyst to facilitate the removal of Sulphur, but deny the remaining allegations.

128. On information and belief, Phillips' and WRB's LSFO hydrotreater refineries separate hydrocarbon liquid components from gaseous components. The Wood River Refinery uses at least one process heater and/or at least one cooling tower to separate hydrocarbon liquid components from bulk gaseous components. Exhibit 7 (March 2018 Permit); Exhibit 21 (April 2019 Permit).

RESPONSE: Admit.

129. On information and belief, Phillips' and WRB's LSFO hydrotreater refineries separate residual gaseous components and byproduct hydrocarbons. The Wood River Refinery uses at least one process heater and/or at least one cooling tower to separate residual gaseous components and byproduct hydrocarbons. Exhibit 7 (March 2018 Permit); Exhibit 21 (April 2019 Permit).

RESPONSE: Admit.

[18] *See* Exhibit 22 (Robinson, et al., Hydrotreating and Hydrocracking: Fundamentals (Oct. 2007)) at Section 4.2 and 5, describing the desulfurization process including catalysts.

130. Phillips' and WRB's LSFO hydrotreater refineries produce and discharge LSFO products, including VLSFO, which has a total sulfur content of "less than 0.5 wt%." *See, e.g.,* Exhibit 15 (SDS Very Low Sulfur Fuel Oil).

RESPONSE: Deny.

131. Phillips' SDSs further indicates that both HSFO and VLSFO are of merchantable quality as a residual marine fuel oil. *See* **www.phillips66.com/customers** (providing "[s]afety Data Sheets for all current, *commercially sold* or *traded* products," including the above-mentioned SDSs) (emphases added). Moreover, on information and belief, to the extent that Phillips purchases third party HSFO, the fuel oil is of merchantable quality as a residual marine fuel oil, as it is sold as a HSFO.

RESPONSE: Deny.

132. Phillips' current Marine Fuels Sales Addendum [19] (Exhibit 19) provides that "Seller's fuel grades will conform to ISO 8217 specifications." In addition, IMO recognizes that "[t]he bunker market uses ISO 8217:2017 specifications to ensure that the properties of the fuels it delivers conform to a standard that mean they comply with MARPOL Annex VI."[20] Moreover, IMO suggests that "ship operators could consider ordering fuel oil specified in accordance with the ISO 8217 marine fuel standard."[21] On information and belief, the SDSs together with the Sales Addendum and industry practices indicate that the HSFO and VLSFO products meet ISO 8217 specifications. Further, on information and belief, to the extent that Phillips purchases third party

[19] Phillips' Marine Fuels Sales Addendum is *available at* https://www.phillips66.com/customers-site/Documents/Phillips%2066%20Marine%20Fuels%20Sales%20Addendum.pdf.

[20] IMO's 2019 Guidelines.

[21] IMO's Guidance.

HSFO to use in its LSFO hydrotreaters, industry practices, at least, reasonably support that such fuel oil meets ISO 8217 specifications.

RESPONSE: Defendants admit that this paragraph reproduces portions of Exhibits 19, the IMO 2019 Guidelines, and the IMO's Guidamce. Defendants deny the remaining allegations set forth in this paragraph.

133. On information and belief, Phillips has indirectly infringed, is currently indirectly infringing, and will continue indirectly infringing at least claim 1 of the '287 Patent in violation of 35 U.S.C. § 271 *et seq.,* by inducing—as the operator and managing partner of WRB—WRB to make, use (including supply and trade), sell and/or offer to sell the Accused Products in an infringing manner and/or contributing to such infringement with knowledge that their actions are infringing acts, as discussed in the preceding section.

RESPONSE: Deny.

134. Phillips and WRB are not licensed or otherwise authorized by Magēmā to make, use, import, sell, or offer to sell any products covered by the '287 Patent, and Phillips' and WRB's conduct is, in every instance, without Magēmā's consent.

RESPONSE: Admit.

135. Phillips' and WRB's infringement of the '287 Patent has been willful, as described herein. On information and belief, Phillips was aware of the Magēmā patent applications that issued as the Magēmā Patents as early as April 2017. At the latest, Phillips became aware of the '884 Patent on or around June 2019, when Mr. Moore notified Phillips 66 of the issuance of the

‘884 Patent as well as the pendency of the other applications that issued as the Magēmā Patents (including the ‘287 Patent). Accordingly, Phillips—and WRB through Phillips—had pre-suit knowledge of the Magēmā Patents.

RESPONSE: Defendants admit that Mr. Moore notified Phillips 66 of the issuance of the ’884 Patent on or around June 2019 and other pending applications. Defendants deny the remaining allegations set forth in this paragraph.

136. Phillips and WRB have further been aware of the ‘287 Patent since at least the filing date of this Complaint.

RESPONSE: Admit.

137. Phillips and WRB has acted egregiously in continuing directly and indirectly infringing the Magēmā Patents despite receiving notice of the Magēmā Patents, with full knowledge of the Magēmā Patents’ applicability to the Accused Products.

RESPONSE: Deny.

138. Phillips’ and WRB’s continued infringement has damages and will continue to damage Magēmā. Magēmā is entitled to damages adequate to compensate for the infringement, but in no event less than a reasonable royalty as provided for in 35 U.S.C. § 284.

RESPONSE: Deny.

139. Because of Phillips’ and WRB’s willful infringement of the ‘287 Patent, any damages assessed against Phillips and WRB should be increased up to three times the amount

found. As a result of the willful infringement, this is an exceptional case, and Magēmā should, pursuant to 35 U.S.C. § 285, be awarded its reasonable attorney fees in having to pursue this infringement.

RESPONSE: Deny.

140. Due to Phillips' and WRB's infringement of the '287 Patent, Magēmā has suffered, is suffering, and will continue to suffer irreparable injury and damage for which Magēmā has no adequate remedy at law. In contrast, Phillips has reported that its refineries are capable of "swinging" production from one product to another product. Accordingly, the harm posed by an injunction to Phillips and WRB is minimal. Magēmā is therefore entitled to a permanent injunction against Phillips' and WRB's continued infringement.

RESPONSE: Deny.

DEFENDANTS' AFFIRMATIVE DEFENSES

FIRST DEFENSE—NON-INFRINGEMENT

Defendants have not infringed, contributed to the infringement of, or induced the infringement of any valid and enforceable claims of the Magēmā Patents, properly construed, literally, under the doctrine of equivalents or in any other manner and have not otherwise committed any acts in violation of 35 U.S.C. § 271.

SECOND DEFENSE—INVALIDITY

Upon information and belief, some or all of the claims of the Magēmā Patents are invalid for failure to satisfy the conditions of patentability set forth in one or more of the provisions of 35 U.S.C. §§ 101, 102, 103 and/or 112, as well as other applicable rules and regulations.

DEFENDANTS' COUNTERCLAIMS

Defendants allege for their declaratory judgment counterclaims of patent non-infringement and invalidity as follows:

1. This counterclaim arises under 28 U.S.C. §§ 2201 and 2202, and this Court has jurisdiction under the laws of the United States concerning actions relating to patents, 28 U.S.C. § 1338(a). Jurisdiction is also conferred upon this Court in that this counterclaim arises out of the same transaction(s) that is the subject matter of the Complaint.

2. There is an actual justiciable controversy between Defendants and Magēmā concerning the infringement and validity of the Magēmā Patents.

3. Venue is proper in this judicial district pursuant to 28 U.S.C. §§ 1391(b), 1391(c), and 1400.

4. Magēmā claims to own the right, title and interest in each of the Magēmā Patents, including the right to sue for past and present infringement.

5. Magēmā have asserted that activities of Defendants in the United States infringe the claims of the Magēmā Patents.

FIRST COUNTERCLAIM
DECLARATORY JUDGMENT OF NON-INFRINGEMENT OF THE '884 PATENT

6. To the extent not inconsistent, Defendants incorporate by reference the preceding allegations as if fully set forth herein.

7. Magēmā has accused Defendants of infringing for making LSFO products at Defendants' Bayway and Wood River facilities.

8. Defendants' Bayway facility hydrotreats fluid catalytic cracking (FCC) cycle oil into Very Low Sulphur Fuel Oil, a marine fuel oil blend component. Then, at a separate terminal, the Very Low Sulphur Fuel Oil is blended with high sulphur, non-hydrotreated FCC slurry and distillate, and optionally other components, to make the accused LSFO products.

9. The FCC cycle oil hydrotreated at the Bayway facility is not compliant with ISO 8217:2017 or of merchantable quality as a residual marine fuel oil.

10. Prior to blending, the Very Low Sulphur Fuel Oil from the Bayway facility is not compliant with ISO 8217:2017 or of merchantable quality as a residual marine fuel oil.

11. Defendants' Wood River facility hydrotreats FCC slurry oil into a Very Low Sulphur Fuel Oil, a marine fuel oil blend component. Then, at a separate terminal, the Very Low Sulphur Fuel Oil is blended with high sulfur components, and other low sulphur components to make the accused LSFO products.

12. The FCC slurry oil hydrotreated at the Wood River facility is not compliant with ISO 8217:2017 or of merchantable quality as a residual marine fuel oil.

13. Prior to blending, the Very Low Sulphur Fuel Oil from the Wood River facility is not compliant with ISO 8217:2017 or of merchantable quality as a residual marine fuel oil.

14. Every independent claim of the '884 Patent requires a hydroprocessed heavy marine fuel oil "wherein prior to hydroprocessing the high sulfur heavy marine fuel oil is compliant with ISO 8217:2017."

15. Claim 1 of the '884 Patent requires the claimed heavy marine fuel oil to "consist[] essentially of a 100% hydroprocessed high sulfur heavy marine fuel oil."

16. According to a co-inventor, the "claims require the heavy fuel oil to be merchantable."

17. According to a co-inventor, claim 5 of the '884 Patent requires that "the low sulfur hydrocarbon fuel composition consists essentially of 100% hydroprocessed high sulfur residual marine fuel oil by volume."

18. Defendants' do not infringe any claim of the '884 Patent at least because the accused LSFO products do not "consist[] essentially of 100% hydroprocessed high sulfur heavy marine fuel oil" and their production does not involve hydroprocessing marine fuel oil that is compliant with ISO 8217:2017 and merchantable, or hydroprocessed components that are compliant with ISO 8217:2017 and merchantable.

19. Pursuant to the Federal Declaratory Judgment Act, 28 U.S.C. § 2201 et seq., Defendants requests a declaration by the Court that they do not infringe any claim of the '884 Patent.

SECOND COUNTERCLAIM
DECLARATORY JUDGMENT OF NON-INFRINGEMENT OF THE '141 PATENT

20. To the extent not inconsistent, Defendants incorporate by reference the preceding allegations as if fully set forth herein.

21. Every claim of the '141 Patent requires "Feed Heavy Marine Fuel Oil" that "complies with ISO 8217."

22. Every claim of the '141 Patent requires "Product Heavy Marine Fuel Oil [that] has: a maximum of kinematic viscosity at 50° C. (ISO 3104) between the range from 180 mm2/s to 700 mm2/s; a maximum of density at 15° C. (ISO 3675) between the range of 991.0 kg/m3 to 1010.0 kg/m3; a CCAI in the range of 780 to 870; a flash point (ISO 2719) no lower than 60° C.; a total sediment—aged (ISO 10307-2) of less than 0.10 mass %; a carbon residue—micro method (ISO 10370) less than 20.00 mass %."

23. Defendants' do not infringe any claim of the '141 Patent at least because production of the accused LSFO products does not involve feedstock that is compliant with ISO 8217, or hydroprocessed products that have the claimed combination of kinematic viscosity, density, CCAI, flash point, total sediment, and carbon residue attributes.

24. Pursuant to the Federal Declaratory Judgment Act, 28 U.S.C. § 2201 et seq., Defendants requests a declaration by the Court that they do not infringe any claim of the '141 Patent.

THIRD COUNTERCLAIM
DECLARATORY JUDGMENT OF NON-INFRINGEMENT OF THE '287 PATENT

25. To the extent not inconsistent, Defendants incorporate by reference the preceding allegations as if fully set forth herein.

26. Every claim of the '287 Patent requires a product produced by the claimed process that "is ISO8217:2017 compliant for a residual marine fuel, []is of merchantable quality as such" and "is made from a heavy marine fuel oil that is ISO 8217:2017 compliant."

27. Defendants' do not infringe any claim of the '287 Patent at least because production of the accused LSFO products does not involve hydroprocessing marine fuel oil that is compliant with ISO 8217:2017, or hydroprocessed components that are compliant with ISO 8217:2017 and merchantable.

28. Pursuant to the Federal Declaratory Judgment Act, 28 U.S.C. § 2201 et seq., Defendants requests a declaration by the Court that they do not infringe any claim of the '287 Patent.

FOURTH COUNTERCLAIM
DECLARATORY JUDGMENT OF NON-INFRINGEMENT OF THE '709 PATENT

29. To the extent not inconsistent, Defendants incorporate by reference the preceding allegations as if fully set forth herein.

30. Claim 1 of the '709 Patent requires processing "Distressed Fuel Oil Materials" to make "Feedstock Heavy Marine Fuel Oil [that] complies with ISO 8217."

31. Claim 10 of the '709 Patent requires a "pretreatment unit comprising means for transforming Distressed Fuel Oil Materials into a pretreated Feedstock Heavy Marine Fuel Oil that is compliant with the bulk properties of ISO 8217."

32. Defendants' do not infringe any claim of the '709 Patent at least because production of the accused LSFO products does not involve processing Distressed Fuel Oil Materials to make Feedstock Heavy Marin Fuel Oil that complies with ISO 8217.

33. Pursuant to the Federal Declaratory Judgment Act, 28 U.S.C. § 2201 et seq., Defendants requests a declaration by the Court that they do not infringe any claim of the '709 Patent.

FIFTH COUNTERCLAIM
DECLARATORY JUDGMENT OF INVALIDITY OF THE '884 PATENT

34. To the extent not inconsistent, Defendants incorporate by reference the preceding allegations as if fully set forth herein.

35. U.S. Patent No. 8,999,011 (the "'011 Patent") is prior art to the Magēmā Patents.

36. The '011 Patent concerns the same field as the Magēmā Patents.

37. U.S. Patent No. 9,109,176 (the "'176 Patent") is prior art to the Magēmā Patents.

38. The '176 Patent concerns the same field as the Magēmā Patents.

39. The '011 Patent and the '176 Patent (collectively, the "Exxon Patents") share the same specification and describe the same problem that Magēmā contends led to its purported inventions—the IMO 2020 sulfur cap.

40. The Exxon patents also describe solution to the IMO 2020 sulfur cap problem that is similar to Magēmā's—remove sulfur from existing fuels to make compliant fuels.

41. The Exxon patents describe solving the problem in the same as Magēmā's. For example, the Exxon describe one aspect of the disclosed method as follows:

42. One aspect of the invention relates to a method for making a low sulfur marine and/or bunker fuel composition with a reduced concentration of components that have been cracked, the method comprising: contacting a gasoil feed stream having at least 2000 wppm, for example at least 7500 wppm, sulfur content with a hydrogen-containing gas in the presence of a hydrotreating catalyst under effective hydrotreating conditions in a catalytic feed hydrotreater, such that the product exhibits at most 5000 wppm, for example at most 1000 wppm, sulfur content, a pour point of at least 7° C., and a kinematic viscosity of at least 12 cSt at about 50° C., without the product being subject to cracking; optionally blending at least a portion of the uncracked product with 0-70 vol % of other components, selected from viscosity modifiers, pour point depressants, lubricity modifiers, antioxidants, and combinations thereof, to form a marine and/or bunker fuel composition, the resulting marine and/or bunker fuel composition containing the uncracked product having: at most 5000 wppm, for example at most 1000 wppm, sulfur content; at most 25 vol %, based on all components of the marine and/or bunker fuel composition, of residual components selected from crude fractionation vacuum resid, crude fractionation atmospheric resid, visbreaker resid, deasphalted vacuum resid, slurry oil, and combinations thereof; less than 50 vol %, based on all components of the marine and/or bunker fuel composition, of residual components, components subject to a refinery cracking step, or both; and at least one of a kinematic viscosity at about 50° C. from 12 cSt to 50 cSt, a density at about 15° C. from 0.90

g/cm3 to 0.94 g/cm3, a pour point from 7° C. to 45° C., and a calculated carbon aromaticity index of 850 or less.

43. The Exxon patents disclose most, if not all, of the elements of the claims of the Magēmā Patents. Any allegedly missing limitations are common knowledge of a person of ordinary skill in the art as of the priority date of the Magēmā Patents. A person of ordinary skill in the art would have reason to combine the Exxon Patents with her industry knowledge to combine her knowledge with the disclosure of the Exxon Patents to create the purported inventions of the Magēmā Patents.

44. To the extent not inconsistent, Defendants incorporate by reference the allegations of its Answer and Defenses as if fully set forth herein.

45. One or more of the claims of the '884 Patent are invalid under 35 U.S.C. §§ 102, 103, and/or 112.

46. The claims of the '884 Patent are obvious in light of the Exxon Patents and/or industry knowledge as of the '884 Patent's priority date.

47. Pursuant to the Federal Declaratory Judgment Act, 28 U.S.C. § 2201 et seq., Defendants requests a declaration by the Court that the claims of the '884 Patent are invalid for failure to comply with one or more of the requirements of the patent laws, including, but not, limited to 35 U.S.C. §§ 102, 103, and/or 112, and the rules and laws pertaining to those provisions.

SIXTH COUNTERCLAIM
DECLARATORY JUDGMENT OF INVALIDITY OF THE '141 PATENT

48. To the extent not inconsistent, Defendants incorporate by reference the allegations of its Answer and Defenses as if fully set forth herein.

49. One or more of the claims of the '141 Patent are invalid under 35 U.S.C. §§ 102, 103, and/or 112.

50. The claims of the '141 Patent are obvious in light of the Exxon Patents and/or industry knowledge as of the '141 Patent's priority date.

51. Pursuant to the Federal Declaratory Judgment Act, 28 U.S.C. § 2201 et seq., Defendants requests a declaration by the Court that the claims of the '141 Patent are invalid for failure to comply with one or more of the requirements of the patent laws, including, but not, limited to 35 U.S.C. §§ 102, 103, and/or 112, and the rules and laws pertaining to those provisions.

SEVENTH COUNTERCLAIM
DECLARATORY JUDGMENT OF INVALIDITY OF THE '287 PATENT

52. To the extent not inconsistent, Defendants incorporate by reference the allegations of its Answer and Defenses as if fully set forth herein.

53. One or more of the claims of the '287 Patent are invalid under 35 U.S.C. §§ 102, 103, and/or 112.

54. The claims of the '287 Patent are obvious in light of the Exxon Patents and/or industry knowledge as of the '287 Patent's priority date.

55. Pursuant to the Federal Declaratory Judgment Act, 28 U.S.C. § 2201 et seq., Defendants requests a declaration by the Court that the claims of the '287 Patent are invalid for

failure to comply with one or more of the requirements of the patent laws, including, but not, limited to 35 U.S.C. §§ 102, 103, and/or 112, and the rules and laws pertaining to those provisions.

EIGHTH COUNTERCLAIM
DECLARATORY JUDGMENT OF INVALIDITY OF THE '709 PATENT

56. To the extent not inconsistent, Defendants incorporate by reference the allegations of its Answer and Defenses as if fully set forth herein.

57. One or more of the claims of the '709 Patent are invalid under 35 U.S.C. §§ 102, 103, and/or 112.

58. The claims of the '709 Patent are obvious in light of the Exxon Patents and/or industry knowledge as of the '709 Patent's priority date.

59. Pursuant to the Federal Declaratory Judgment Act, 28 U.S.C. § 2201 et seq., Defendants requests a declaration by the Court that the claims of the '709 Patent are invalid for failure to comply with one or more of the requirements of the patent laws, including, but not, limited to 35 U.S.C. §§ 102, 103, and/or 112, and the rules and laws pertaining to those provisions.

DEMAND FOR JURY TRIAL

Defendants respectfully request a jury trial on any issues so triable.

PRAYER FOR RELIEF

WHEREFORE, Defendants pray that the Court deny all of Magēmā's requests for relief and respectfully requests judgment as follows:

A. Judgment that each claim of the Magēmā Patents is not infringed and invalid;

B. Judgment finding this case to be an exceptional case as against Magēmā, and awarding Defendants their reasonable costs in this action, including attorneys' fees and prejudgment and postjudgment interest; and

C. Such other and further relief, both general and special, at law or in equity, as the Court deems just and proper.

Respectfully submitted,

/s/ Charles B. Walker Jr.
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Attorneys for Defendants

CERTIFICATE OF SERVICE

I hereby certify that on September 3, 2020, I caused the foregoing to be electronically filed with the Clerk of the Court using the CM/ECF System.

/s/ Charles B. Walker Jr.
Charles B. Walker, Jr